

CSCE 3304 - Digital Design 2  
Project 1  
A small standard cell library

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## 1 Introduction

## 2 Inverter

### 2.1 Schematic

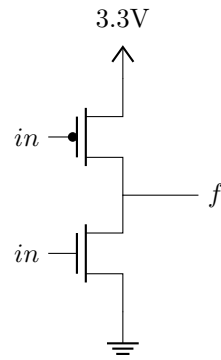


Figure 1:

## 2.2 Stick diagram

## 2.3 Schematic

# 3 Tri-state Inverter

## 3.1 Schematic

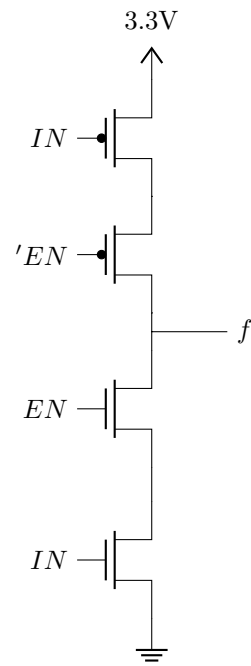


Figure 2:

## 4 3 input NAND

### 4.1 Schematic

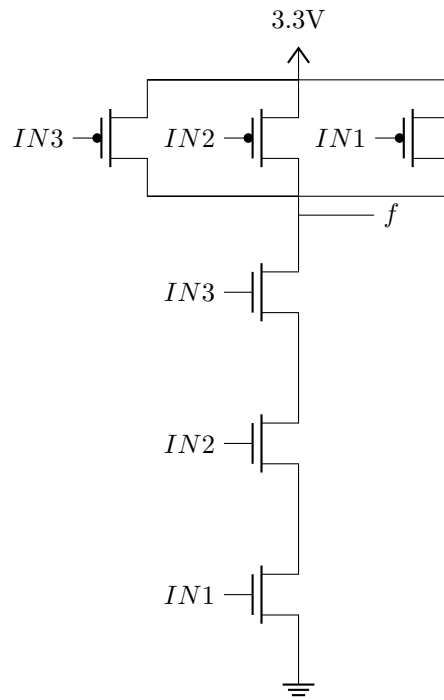


Figure 3:

## 5 3 input NOR

### 5.1 Schematic

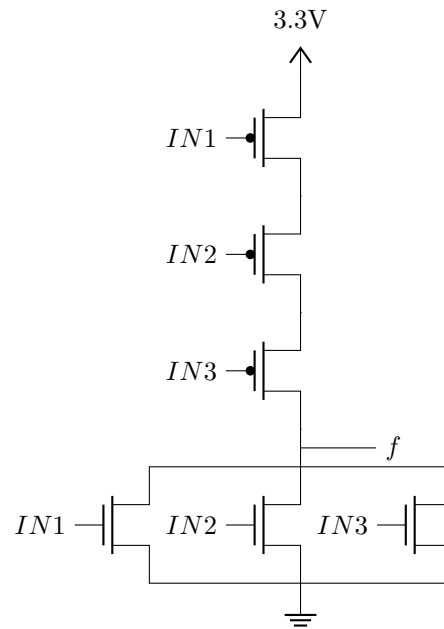


Figure 4:

## 6 Complex function

### 6.1 Schematic

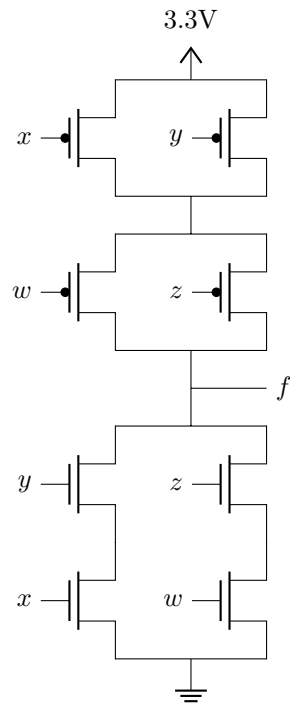


Figure 5:

## 6.2 Stick diagram

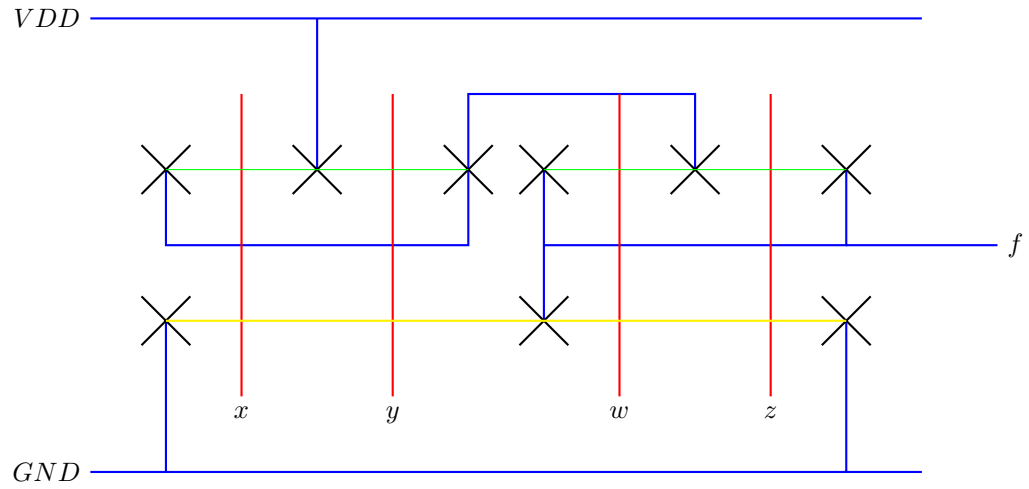


Figure 6:

## 6.3 Layout

## 6.4 Transition time

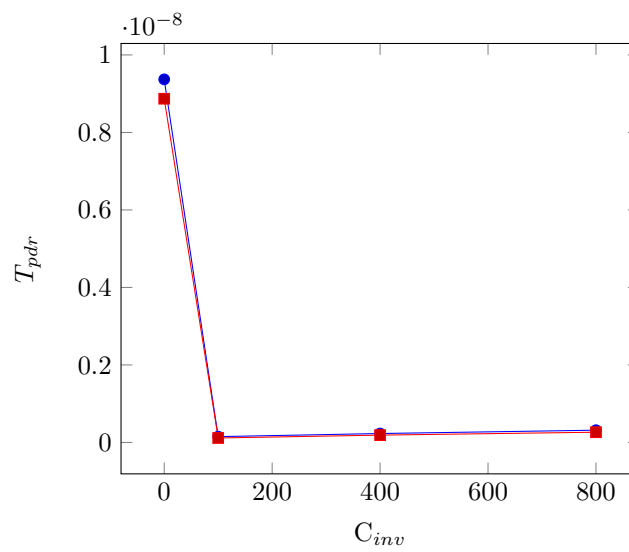


Figure 7:  $T_{pdr}$  to  $C_{inv}$



## **6.5 Data collection**

## **6.6 Minimum cell height**